

clude that it does not occur in Scandinavia, Denmark, Germany, and Austro-Hungary; for the Myriopoda of these countries have been so thoroughly investigated, that such a conspicuous species could not easily have been overlooked. Unfortunately nothing or next to nothing is known of the Myriopod fauna of Portugal and France, and in the absence of this information any attempt to account for the existence of this species in Britain must clearly be regarded as purely provisional.

No one will probably dispute that the species has been introduced from the mainland into Madeira. Moreover, it is quite likely that from Madeira it has made its way into the Azores. But its existence in England may be due to at least one or more than one of three causes—either the species inhabited England and France before the separation of the former tract of land, or it has been introduced from the continent since the separation, or it has been carried over to us from the Azores. In support of this last hypothesis we may urge the great rarity of the species in England and its apparent confinement to our south-western counties. For, coming from so warm a locality, we should expect that it would only be able to maintain itself in the extreme south-west, where the climate is moist and relaxing and frosts are of rare occurrence. The introduction of the species into England from the Azores might have been effected, one would think, by means of a floating tree-trunk driven before a south-westerly gale.

We can never, however, satisfy ourselves on these points until collectors have filled up the gaps in our knowledge with respect to the Myriopod fauna of Portugal and France.

XI.—*Descriptions of new Species of Upupæ and Trochili in the Collection of the British Museum.* By OSBERT SALVIN, M.A., F.R.S.

UPUPÆ.

Upupa somalensis.

Upupa epops senegalensis, Shelley, Ibis, 1885, p. 397.

Adult male. Similar to that of *U. epops*, and with the primaries and tail similarly banded with white; the upper back,

neck, head, and under surface are deeper rufous, almost as in *U. africana*, and the secondaries are marked as in that species, the basal two thirds being white and the apical black third crossed by a white transverse band. Total length about 10·5 inches, wing 5·4, tail 3·7, bill 2·2, tarsus 0·8.

Hab. Somali-Land.

There can be little doubt that the bird here described belongs to a species distinct both from *U. epops* and *U. africana*, having the primaries banded as in the former bird and the secondaries like those of the latter as well as its rich colour.

Scoptelus notatus.

Adult. Similar to that of *S. aterrimus*, but the upper surface bluer where *S. aterrimus* is purple and greener where that bird is steel-blue; the outermost rectrix on either side always has a subterminal white band, which varies somewhat in width and is sometimes divided into two spots by the dark shaft.

Young. Differs from the young of *S. aterrimus* in the same way as the adults from one another.

Hab. North-east Africa, perhaps extending into the Congo region.

The adult males of this species have a dark greyish subterminal patch on the inner webs of the primaries. In the females this is much larger, paler, and more distinct.

This bird of N.E. Africa has usually been united with the West-African *S. aterrimus*; but from the specimens before me I have no difficulty in distinguishing the two birds.

TROCHILI.

Panychlora micans.

Adult male. Similar to that of *P. aliciae*, and of about the same size. The whole plumage is of a rich reddish golden hue, brighter and redder on the crown. The tail is very dark and of more bronzy tint than in the allied species, but the outer rectrices are distinctly green, and not coppery bronze, as in *P. russata*; moreover the tail is slightly forked.

Hab. —?

A single male specimen in the Gould Collection is the only one I have seen of this bird. It is very richly coloured, and, though differing obviously from *P. aliciae*, may possibly prove to be a variety of that species.

Heliangelus laticlavus.

Adult male. Very similar to that of *H. clarissæ*, and with the upper surface and tail coloured in the same way; on the under surface the white pectoral band is much wider, more than double the width of that of the allied form; there is no band of glittering green feathers below the white, and the middle of the abdomen is more distinctly buff; the under tail-coverts are white, with wider dusky shaft-stripes.

Female unknown.

Hab. Ecuador.

Heliangelus violicollis.

Adult male. Similar to that of *H. strophianus*, but the upper surface of a darker, more rufescent brown, especially in the middle of the back; the abdomen too has a more bronzy hue; the most obvious difference is in the colour of the throat, which is glittering violet-blue, without any red or rosy tint.

Young male. Has the feathers of throat black, with white edges; amongst these the glittering violet feathers of the adult appear.

Hab. Ecuador.

Heliotrypha speciosa.

Adult male. Very similar to that of *H. Barrali*, but with a longer bill and the throat of a more glittering olive-green, without the leaden or silvery hue of the allied species; the feathers of the breast are rather more conspicuously white at the base, but this character is also seen in *H. Barrali*. Total length about 5 inches, wing 2.5; tail, central rectrices 1.45, lateral 1.6; bill 1.

Hab. Colombia?

Amazilia Sumichrasti.

Adult male. Upper surface shining grass-green, darker on the head, more golden-bronze on the rump and upper tail-coverts; throat and breast glittering grass-green, the white bases of the feathers hardly showing anywhere; abdomen and flanks shining grass-green; under tail-coverts rufous; tail rich lustrous coppery bronze; bases of the inner primaries

and secondaries chestnut; maxilla black; mandible flesh-colour, the tip black. Total length about 3·8 inches, wing 2·1, tail 1·2, bill 0·9.

Hab. Tehuantepec, South Mexico (*Sunichrast*).

In some respects this species resembles *A. ocai*, but the richer, more coppery colour of the tail, the dull-coloured crown, and uniform green throat readily distinguish it. I am indebted to M. Boucard for the specimen now described.

Polyerata decora.

Damophila amabilis, Salv. P. Z. S. 1870, p. 211.

Adult male. Similar to that of *P. amabilis*, but the bill longer, the glittering feathers of the crown extending to the nape, and the upper tail-coverts and central rectrices dark shining green, without reddish or purple shade. Length of bill 1·1 inch.

Adult female has also a long bill and the upper tail-coverts and central rectrices dark green without purple shade.

Hab. Chiriqui.

I have long hesitated to separate this bird from *P. amabilis*, but am now convinced of its distinctness. Its range is probably very restricted and confined to the western slopes of the Volcano of Chiriqui. On the eastern side the range of *P. amabilis* is probably continuous from Costa Rica to Panama.

Oreopyra pectoralis.

Adult male. Similar to that of *O. calolæma* in all respects except that the breast, when viewed from in front, is nearly black, and not glittering green.

The female is probably undistinguishable from that of *O. calolæma*.

Hab. Costa Rica.

Phæolæma cervinigularis.

Similar to *P. rubinoides* as to the colour of the crown, which has a central glittering green stripe. In size it equals *P. æquatorialis*, but differs from that species in the colour of the crown and from both in having the chin pale chestnut, like the sides of the throat, with hardly a trace of green. Total length about 5 inches, wing 2·9; tail, central rectrices 1·4, lateral 2; bill 1·3.

Hab. Ecuador?

Of the two skins in the Museum one was in Gould's Collection and one in our own, the latter having been obtained from Mr. Whitely. Both are males. The exact locality where this bird is found remains to be discovered; at present I can only say that the types are made up in the manner usual in collections of humming-birds from Ecuador.

Eriocnemis ventralis.

Adult male. Upper surface shining grass-green, becoming bronzy black on the hind neck and crown, and glittering olive-green on the rump and upper tail-coverts; under surface with the throat bronzy black, a glittering blue gular patch; breast glittering green, shading into glittering amethyst on the abdomen; under tail-coverts glittering purplish blue; tail steel-blue; tibial tufts pure white; bill black. Total length about 3.9 inches, wing 2.25; tail, central rectrices 1.05, lateral 1.65; bill 0.85.

Hab. Colombia.

BIBLIOGRAPHICAL NOTICES.

Aids in Practical Geology. By GRENVILLE A. COLE, F.G.S., Professor of Geology in the Royal College of Science for Ireland. 8vo. Pp. i-xiv & 1-402; with 136 illustrative cuts. C. Griffin & Co.: London, 1891.

CHAPTER I. treats of Geological observations to be made in the field, from lowland to upland and into the mountains, with the utensils required and the methods recommended. For the construction of maps and sections, Geikie's and Penning's books are referred to. Mr. Dalton's geometric process of determining the true dip between two uncertain dips in the sides of a quarry is given at page 6. For labels, mentioned at page 10, good pencil-writing will surely resist moisture better than ink. Chapter II. is short, but important; treating of the collecting and packing of specimens.

As the chief aim of this excellent manual is to teach the student, whether indoors or abroad, to recognize the various kinds of Rocks—sedimentary, igneous, and metamorphic—that constitute the solid portions of the Earth's surface, the knowledge of how to find out and discriminate their constituent minerals is of primary importance. Hence Chapters III.-IX. (pp. 13-83) treat of the physical characters